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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _14 February 2007_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _9-21 and 29-46_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _9-21 and 29-46_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _31 July 2003_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   In the amendment filed on 2/14/07, claims 1-8 and 22-28 have been cancelled,

claims 9-21 and 29-40 have been amended, and new claims 41-46 have been added.

The currently pending claims considered below are Claims 9-21 and 29-46.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claims 29-32 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. For an invention to be statutory, an invention

must disclose a "useful, tangible, and concrete result". The claimed invention as a whole

must be useful and accomplish a practical application. That is, it must produce a "useful,

concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-

02. The purpose of this requirement is to limit patent protection to inventions that

possess a certain level of "real world" value, as opposed to subject matter that

represents nothing more than an idea or concept, or is simply a starting point for future

investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689,

693-96 (1966)); In re Fisher, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); In re

Ziegler, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

Independent claim 29 recites the limitation "wherein the convey changes

message is used to determine whether or not a change represented in the change

argument should be applied to the second replica". The claim fails to produce a tangible

result when it is determined that a convey changes message indicates that a change

should not be applied to the second replica. In this case, the method outlined would

accomplish no tangible result, with no changes accomplished or produced. Therefore

the claim is rendered non-statutory. Proper correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 9-16, 18-21 and 29-46 are rejected under 35 U.S.C. 102(e) as being

anticipated by Peng (US Patent 6,928,467 B2)

As per claim 9, Peng teaches "In a sync community that includes one or more

replicas, a method for replicating the one or more replicas," (see Abstract)

"the method comprising a first replica performing: sending a request changes

message to a second replica in a sync community, wherein the request changes

message includes a knowledge" (Figure 10 reference 1002, 1004 and column 14 line 62

– column 15 line 14, wherein a source object store containing a copy of the object

sends to a destination object store a request sync message) "including information

representing changes that are known by the first replica by including information representing a change ID for each change known by the first replica wherein each change ID includes a replica ID associated with the change and a version specific to a specific change;" (column 10 lines 49-53, column 11 line 64 – column 12 line 15, and Appendix A, wherein a sync message can contain fields representing object IDs, syncUpdates representing update data in order, store Version representing source, TotalNumberOfSyncUpdates representing number of updates, and applyUpdateTypes, representing update types, among other fields to identify updates)

"receiving one or more convey changes messages from the second replica, wherein each convey changes message includes at least one change that the first replica does not know based on a comparison by the second replica between the knowledge of the first replica and a knowledge of the second replica." (column 15 lines 15-25, wherein the destination object store responds with the required information, included in a version vector)

"and applying one or more of the one or more convey changes messages from the second replica to data at the first replica" (column 8 line 41 – column 9 line 4, column 12 lines 15-33, wherein a destination object store applies the received updates from a source object store according to sync messages)

As per claim 10, Peng teaches "receiving a change ID for each change in each convey message;" (column 4 lines 51-65 and column 5 lines 14-26, wherein a version vector contains replica ID identifying the object store)

"and receiving a made-with-knowledge value for a particular change, wherein the made-with knowledge value represents knowledge available to a particular replica when the particular replica made the particular change." (column 15 lines 21-29)

As per claim 11, Peng teaches "receiving a complete bundle message from the second replica." (column 15 lines 25-38, wherein objects with their Ids and version vectors are packed together)

As per claim 12, Peng teaches "receiving a count in the complete bundle message that indicates how many convey changes messages were sent by the second replica;" (column 5 lines 14-25, column 6 lines 15-26)

"and receiving a learned knowledge in the complete bundle message that represents knowledge that the first replica should learn if the first replica received and applied the convey changes message reflected in the count." (column 7 line 64 – column 8 line 8)

As per claim 13, Peng teaches "sending an advertise changes message to one or more replicas including the second replica in the sync community, wherein the advertise changes message includes the knowledge of the first replica and enables each of the one or more replicas to determine whether to replicate with the first replica." (column 15 lines 48-56)

As per claim 14, Peng teaches "receiving a request changes message from a particular replica in response to the advertise changes message." (column 15 lines 48-56)

As per claim 15, Peng teaches "receiving a request changes message from the second replica, wherein the request changes message includes the knowledge of the second replica;" (column 15 lines 15-25)

"and sending at least one convey changes message to the second replica, wherein the at least one convey changes message includes one or more changes, a change ID for each of the one or more changes, and a made-with-knowledge value for at least some of the one or more changes." (column 4 lines 51-65 and column 5 lines 14-26)

As per claim 16, Peng teaches "sending a complete bundle message to the second replica that includes a count and a learned knowledge." (column 15 lines 39-48, wherein the version vector is updated)

As per claim 18, Peng teaches "sending a cancel change flow message to indicate that the first replica does not want to receive additional convey changes messages." (column 10 lines 20-48)

As per claim 19, Peng teaches "including a filter in the request changes message such that only changes satisfying the filter are sent in the convey changes messages." (column 15 lines 25-38)

As per claim 20, Peng teaches "receiving a complete bundle message that includes filtered learned knowledge, wherein the first replica maintains a filtered learned knowledge and a knowledge." (column 15 lines 15-38)

As per claim 21, Peng teaches "receiving a minimum knowledge in at least one of the convey changes messages, wherein the minimum knowledge identifies a

minimum knowledge of the first replica in order to ensure that the first replica and the

second replica have a valid replication." (column 15 lines 48-56)

As per claim 29, Peng teaches "In a sync community including one or more

replicas, a method for communicating changes from a first replica to other replicas in

the sync community," (see Abstract)

"the method comprising: storing a knowledge at the first replica, wherein the

knowledge includes one or more change IDs that represent changes that the first replica

is aware of;" (column 4 lines 43-63, wherein object information is stored in an object

store)

"and sending a convey changes message to a second replica," (Figure 10

reference 1002, 1004 and column 14 line 62 – column 15 line 14, wherein a source

object store containing a copy of the object sends to a destination object store a request

sync message)

"wherein the convey changes message comprises: a change argument that

represents a particular change;" (column 14 line 62 – column 15 line 14)

"a change ID argument that is associated with the particular change, wherein the

change ID argument identifies a particular replica that assigned a change ID to the

particular change;" (column 15 lines 15-25, wherein the destination object store

responds with the required information, included in a version vector)

"a made-with-knowledge argument that includes a knowledge" (Figure 10

reference 1002, 1004 and column 14 line 62 – column 15 line 14, wherein a source

object store containing a copy of the object sends to a destination object store a request sync message) "including information representing changes that are known by the first replica by including information representing a change ID for each change known by the first replica wherein each change ID includes a replica ID associated with the change and a version specific to a specific change for changes known by the particular replica that assigned the change ID when the change ID was assigned to the particular change or when the change argument is sent;" (column 10 lines 49-53, column 11 line 64 – column 12 line 15, and Appendix A, wherein a sync message can contain fields representing object IDs, syncUpdates representing update data in order, store Version representing source, TotalNumberOfSyncUpdates representing number of updates, and applyUpdateTypes, representing update types, among other fields to identify updates)

"wherein the convey changes message is used to determine whether or not a change represented in the change argument should be applied to the second replica." (column 8 line 41 – column 9 line 4, column 12 lines 15-33, wherein a destination object store applies the received updates from a source object store according to sync messages)

As per claim 30, Peng teaches "storing the convey changes message on a removable medium;" (column 3 lines 53-64)

"and transporting the removable medium to the second replica such that the second replica can retrieve and apply the particular change." (column 1 lines 31-47)

As per claim 31, <u>Peng</u> teaches "storing the convey changes message on a public area in a server where the second replica can retrieve the convey changes message from the public area on the server." (column 3 lines 53-64)

As per claim 32, <u>Peng</u> teaches "A computer program product having computer-executable instructions for performing the method of claim 29." (column 1 line 66 – column 2 line 3, "software mechanism")

As per claim 33, <u>Peng</u> teaches "In a sync community that includes one or more replicas, a computer program product for implementing a method for replicating the one or more replicas, the computer program product comprising:" (see Abstract)

"a computer readable medium having computer-executable instructions for performing the method, the method comprising a first replica performing:" (column 1 line 66 – column 2 line 3, "software mechanism")

"sending a request changes message to a second replica in a sync community, wherein the request changes message includes a knowledge" (Figure 10 reference 1002, 1004 and column 14 line 62 – column 15 line 14, wherein a source object store containing a copy of the object sends to a destination object store a request sync message) "including information representing changes that are known by the first replica by including information representing a change ID for each change known by the first replica wherein each change ID includes a replica ID associated with the change and a version specific to a specific change;" (column 10 lines 49-53, column 11 line 64 – column 12 line 15, and Appendix A, wherein a sync message can contain fields

representing object IDs, syncUpdates representing update data in order, store Version

representing source, TotalNumberOfSyncUpdates representing number of updates, and

applyUpdateTypes, representing update types, among other fields to identify updates)

"receiving one or more convey changes messages from the second replica,

wherein each convey changes message includes at least one change that the first

replica does not know based on a comparison by the second replica between the

knowledge of the first replica and a knowledge of the second replica." (column 15 lines

15-25, wherein the destination object store responds with the required information,

included in a version vector)

"and applying one or more of the one or more convey changes messages from

the second replica to data at the first replica" (column 8 line 41 – column 9 line 4,

column 12 lines 15-33, wherein a destination object store applies the received updates

from a source object store according to sync messages)

As per claim 34, Peng teaches "receiving a change ID for each change in each

convey message;" (column 4 lines 51-65 and column 5 lines 14-26, wherein a version

vector contains replica ID identifying the object store)

"and receiving a made-with-knowledge value for a particular change, wherein the

made-with knowledge value represents knowledge available to a particular replica when

the particular replica made the particular change." (column 15 lines 21-29)

As per claim 35, Peng teaches "receiving a complete bundle message from the

second replica that includes a count of the number of convey messages sent by the

second replica and a learned knowledge that represents knowledge the first replica

should learn if the first replica received and applied the number of convey changes messages reflected by the count." (column 15 lines 25-38, wherein objects with their Ids and version vectors are packed together)

As per claim 36, Peng teaches "sending an advertise changes message to one or more replicas including the second replica in the sync community, wherein the advertise changes message includes the knowledge of the first replica and enables each of the one or more replicas to determine whether to replicate with the first replica." (column 15 lines 48-56)

As per claim 37, Peng teaches "receiving a request changes message from the second replica, wherein the request changes message includes the knowledge of the second replica;" (column 15 lines 48-56)

"sending at least one convey changes message to the second replica, wherein the at least one convey changes message includes one or more changes, a change ID for each of the one or more changes, and a made-with-knowledge value for at least some of the one or more changes; and sending a complete bundle message to the second replica that includes a count and a learned knowledge." (column 4 lines 51-65 and column 5 lines 14-26)

As per claim 38, Peng teaches "sending a request changes message to a second replica in a sync community further includes including a filter in the request changes message such that only changes satisfying the filter are sent in the convey changes messages." (column 15 lines 25-48)

As per claim 39, <u>Peng</u> teaches "receiving a complete bundle message that includes filtered learned knowledge, wherein the first replica maintains a filtered learned knowledge and a knowledge." (column 15 lines 15-38)

As per claim 40, <u>Peng</u> teaches "receiving a minimum knowledge in at least one of the convey changes messages, wherein the minimum knowledge identifies a minimum knowledge of the first replica in order to ensure that the first replica and the second replica have a valid replication." (column 15 lines 48-56)

As per claim 41, <u>Peng</u> teaches "the knowledge includes a vector that includes a range of change IDS such that change IDs do not need to be included explicitly" (column 5 lines 14-25, column 7 line 64 – column 8 line 8)

As per claim 42, <u>Peng</u> teaches "the knowledge further includes an exception list when knowledge of changes cannot be continuously represented by the vector, the exception list including additional change IDs for changes outside the range of the vector." (column 17 lines 15-20, column 18 lines 51-58)

As per claim 43, <u>Peng</u> teaches "the convey changes message includes a change, a change ID, and a made with knowledge value including information representing a change ID for each change known by the second replica." (column 10 lines 49-53, column 11 line 64 – column 12 line 15, and Appendix A)

As per claim 44, <u>Peng</u> teaches "the knowledge includes information representing changes made on other replicas than the first replica." (column 13 lines 44-61 and column 26 lines 44-50)

As per claim 45, Peng teaches "at least one replica ID associated with a change

is a replica ID for a replica that assigns change IDs for another replica." (column 20

lines 48-63)

As per claim 46, Peng teaches "replica that assigns change IDs for another

replica is a central server that assigns change IDs for clients of the central server"

(column 14 lines 8-38)

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peng

(US Patent 6,928,467 B2) in view of LaRue et al. (US Publication 2002/0133508 A1)

As per claim 17, Peng is disclosed in claim 1 above. Peng does not teach

"sending a convey knowledge message to indicate to the second replica that the

knowledge of the first replica has changed."

LaRue teaches "sending a convey knowledge message to indicate to the second

replica that the knowledge of the first replica has changed." (Figure 5 reference 537 and

block 100, 107, wherein party datasets are communicated to another record in a

synchronization system that contains knowledge of changes, in the form of a message).

It would have been obvious at the time of the invention for one of ordinary skill in the art

to combine Peng's data synchronization protocol with LaRue's method of

communicating change information between replicas in a synchronization system. This

gives the user the advantage of more relevant information passed between data stores

to improve data synchronization. The motivation for doing so would be to streamline the

data synchronizing process by avoiding retransmitting already known user data (block

0019).

Response to Arguments

8.   Applicant's arguments, see page 11, filed 2/14/2007, with respect to the rejection

of claims 9-21 and 33-40 under 35 USC 101 have been fully considered and are

persuasive. The rejection of claims 9-21 and 33-40 in regards to 35 USC 101 has been

withdrawn. However, applicant's arguments with respect to claims 29-32 have been fully

considered and are not persuasive, as outlined in the 35 USC 101 rejection above.

9.   Applicant's amendments, see page 11, filed 2/14/2007, with respect to the

rejection of claims 9-21, 23-28, 30-32, and 34-40 under 35 USC 112, 2nd paragraph

have been fully considered and are persuasive.

10.   Applicant's arguments, see page 12, filed 2/14/2007, with respect to the rejection

of claims 9-21 and 33-40 under 35 USC 102(e) and 35 USC 103(a) have been fully

considered but they are not persuasive. Details are stated below.

      a.   Examiner is entitled to give claim limitations their broadest reasonable

      interpretation in light of the specification. See MPEP 2111 [R-I]

      Interpretation of Claims-Broadest Reasonable Interpretation

During patent examination, the pending claims must be 'given the

broadest reasonable interpretation consistent with the specification.' Applicant

always has the opportunity to amend the claims during prosecution and broad

interpretation by the examiner reduces the possibility that the claim, once issued,

will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-

51 (CCPA 1969).

b.   Applicant's argument is stated as Peng does not teach "including

information representing changes that are known by the first replica by including

information representing a change ID for each change known by the first replica

wherein each change ID includes a replica ID associated with the change and a

version specific to a specific change".

In response to the argument, Examiner respectfully disagrees. In column

10 lines 49-53, column 11 line 64 – column 12 line 15, and Appendix A of Peng,

it is shown how sync messages transmitted between source object stores and

destination object stores contain several fields to convey information, including

object IDs, syncUpdates representing update data in order, store Version

representing source, TotalNumberOfSyncUpdates representing number of

updates, and applyUpdateTypes, representing update types, among other fields

to identify updates. These fields of data are set by the source object store to

represent various changes that the destination object store will apply to execute

a synchronization and replication process. In column 5 lines 52-66, a sync

version can be represented by a combination of a dirty bit and an update

sequence number to show various versions of an object, as stored in object stores. Therefore, Peng teaches "including information representing changes that are known by the first replica by including information representing a change ID for each change known by the first replica wherein each change ID includes a replica ID associated with the change and a version specific to a specific change".

As per new claim 41-46, Applicant is directed to the 35 USC 102(e) rejection above, wherein a list of possible encoding methods that a destination object source can use is taught. The list of possible encoding methods is sent along with sync messages containing the information outlined above. Therefore, Peng teaches new claim 41-46 as outlined above.

Conclusion

11.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dangelino N. Gortayo whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dangelino N. Gortayo   Tim T. Vo
Examiner   SPE

DL

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